

# MISSOURI CONSERVATIONIST

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## Observing by Watching

**Y**ogi Berra, St. Louis' native son, is as famous for his pearls of wisdom and wit as he is for his Hall of Fame baseball career with the New York Yankees. Yogi was right on when he quipped, "You can observe a lot by watching."

Department of Conservation leaders understand the importance of listening, watching and learning before making decisions or taking actions to manage our state's fish, forest and wildlife resources.

Effective management of today's white-tailed deer population is a challenge of paramount importance in Missouri, and many people are calling for decisive action. In some areas of our state, farmers and homeowners complain that deer numbers are so high that the animals are damaging crops, orchards and ornamental plants. And yet, in other places, both landowners and hunters want more deer.

Through most of the 20th century, deer management focused on controlling the harvest of deer by hunters, transplanting deer to new ranges and preventing illegal kills. Today, deer hunting and watching are hugely popular in Missouri. The expenditures of more than a half million Missouri hunters generate about \$800 million in economic activity each autumn. Surveys tell us that a majority of Missouri citizens highly value the opportunity to watch and hunt white-tailed deer.

We are entering a new era of deer management in Missouri. Although Yogi Berra never used the words "new paradigm," he did declare, "When you come to a fork in the road, take it!" Yogi's point is that, when facing a critical decision, be bold and confident in your action.

Missouri's deer management program has reached "the fork in the road." After obtaining input from many stakeholders, we are taking action. In the weeks and months to come, details about changes in the 2004 deer hunting seasons and the reasons for them will be shared widely through the *Conservationist*, news releases, and our website <[www.missouriconservation.org](http://www.missouriconservation.org)>.

Successful deer management requires understanding, cooperation and collaboration among Department leaders and biologists, landowners, civic and business leaders, hunters and all citizens. Changing the approach to deer management requires that conservation professionals be true to science, but remain flexible and open to the ideas of others.

Between February and April, the Department of Conservation hosted 23 public meetings across the state to hear what citizens had to say about deer and



deer management. Attendance was strong at all the meetings. From Hannibal to Springfield, Maryville to Cape Girardeau, Kirksville to West Plains, and St. Louis to Kansas City, Missourians spoke their minds, and we listened. People agreed, people disagreed, and lots of ideas were exchanged. The meetings truly were an exercise in town hall democracy.

I attended some of the meetings to see what I could observe by watching. I saw that wildlife management and conservation of natural resources are personally important to Missourians. I observed that Missouri citizens are honest and sincere, and that they care a lot about deer and deer hunting. They have good ideas, and they are willing to be part of an effort that will both reduce deer damage and make Missouri deer hunting even better than it is now.

When the details of the changes in deer management emerge, you'll find that the Conservation Department really has observed a lot by watching.

John D. Hoskins, Director

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## Worldwide influence

Just a fast note to encourage your readers to think about offering gift subscriptions to the *Conservationist* to those outside our area.

I was raised in northwest Missouri, but as a professional classical guitarist, composer and author, I ended up moving to Boston to study. Eventually I moved to Europe and worked there for the past 25 years.

I'm back in Missouri again part-time as a visiting professor at Missouri Western State College and have rekindled my interest in outdoor activities. I still travel world-wide and often need to give concert sponsors and colleagues some sort of "thank you" for helping arrange events. A gift subscription to the *Missouri Conservationist* offers them



## JUST VISITING!

Gary Campbell of Columbia snapped this photo of a black rat snake leaving a birdhouse perched on a fencepost in his yard. According to Campbell, the nest was crammed full of old nesting material but held no birds or eggs.

an exciting and positive view of Missouri. It also gives them a chance to practice their English.

Your magazine can be a small but real tool to the end of sharing our mutual appreciation of and respect for the outdoors.

*Anthony Glise, St. Joseph*

**Editor's note:** *The Missouri Conservationist is provided free to adult Missouri residents. Nonresident subscriptions costs \$7 annually. Out of country subscriptions cost \$10 annually. Subscription information is on Page 1.*

## Grounded on snakes

Mark Goodwin's story on snakes should help all of us become more respectful toward all reptiles. We have generally feared snakes because of our lack of knowledge about them. Now we respect them and leave them alone when we encounter one.

I also appreciated the short accompanying article, "Killing a Snake: Is that Legal?" That was a great educational article.

*Larry Mines, Gladstone*

## Still Reading

Thank you for sending me the *Conservationist*. I enjoy it very much. We live two miles south of Farmington, and deer, turkey and lots of birds come up here from Wolf Creek.

I feed the birds all winter, and once in a while I see a turkey. Nothing gives me more pleasure than seeing the wild birds and other animals.

We used to fish, but we are getting too old to travel to Truman Lake. We also got rid of our motor home last year, but we still enjoy reading about other people enjoying the outdoors.

*Edgar Detring, Farmington*

## Princely fishing story

I enjoyed "Best Fishing Trip" very much. It was almost a blow-by-blow description of the fishing trips my grandpa and I used to take when the work was caught up.

The only difference was that we had a Prince Albert can and a few real lead sinkers to go with the bent nails. The little creek we fished still empties into the James River, upstream of the Northview Bridge.

*Terry F. Lawrence, Marshfield*

## Free Parking

The photo of Doris Adams catching her first fish while participating in the Forest Park Voyagers Teacher's Program speaks volumes to the joy to be found by all who partake in the numerous activities and programs going on in our public parks. Another good example is the fine Urban Fishing Program conducted by the Conservation Department.

The smile that Doris has on her face tells me that her students will be hearing one terrific fishing story. Way to go, Doris!

*Fred Boeneker, Glendale*

## Rockaway Booster

I am from southwest Missouri and especially enjoyed the article about the Reed Spring students and the picture on the back cover of Lake Taneycomo.

We have some great opportunities for fishermen here on Lake Taneycomo. You might be interested to know that the city, with the help of the Corps of Engineers and others, have spent great sums of money to improve Rockaway Beach. They have constructed a large fishing pier and reconstructed the ramp to the fishing island. They also have an area where boats can be launched and a dock for loading and unloading.

*Carol Stevens, Rockaway Beach*

*The letters printed here reflect readers' opinions about the Conservationist and its contents. Space limitations prevent us from printing all letters, but we welcome signed comments from our readers. Letters may be edited for length and clarity.*

## Ask the Ombudsman



**Q.** While hiking along a stream my friend and I started noticing a severe burning sensation on our legs (we were wearing shorts). It was really intense pain. We were going through some green plants and determined they were causing our discomfort. The plants were dark green, growing in a fairly rank clump, single stemmed and a little over knee-high. Can you tell us what they were?

**A.** It sounds like you encountered stinging nettle. It's a good plant to be able to identify and avoid. It can cause a sting even through trousers. Unlike brambles and greenbrier, which have noticeable thorns, stinging nettle has tiny inconspicuous hairs which release a toxin that burns like fire and itches. The pain usually subsides in an hour or so.



Stinging nettle



Jewelweed

One remedy is to use the sap from jewelweed to soothe the sting. Jewelweed is also called touch-me-not, which is probably what stinging nettle should be called. It's fairly common and is often found in the same location as stinging nettle. Jewelweed has delicate yellowish orange-colored flowers. It's also reported to be helpful in treating poison ivy.

For more information on these plants try an Internet

search using the key words *Lapotea canadensis* and *Impatiens capensis*. Your search may reveal that stinging nettle was—and still is—a useful raw material for the craft of cordage when handled properly. For more information see the *Outside In* article in the August 2001, *Missouri Conservationist* magazine (available on the web at <[www.missouriconservation.org/kids/out-in/2001/03/1.htm](http://www.missouriconservation.org/kids/out-in/2001/03/1.htm)>).

*Ombudsman Ken Drenon will respond to your questions, suggestions or complaints concerning Conservation Department programs. Write him at P.O. Box 180, Jefferson City, MO 65102-0180, call him at 573/522-4115, ext. 3848, or e-mail him at <[Ken.drenon@mdc.mo.gov](mailto:Ken.drenon@mdc.mo.gov)>.*

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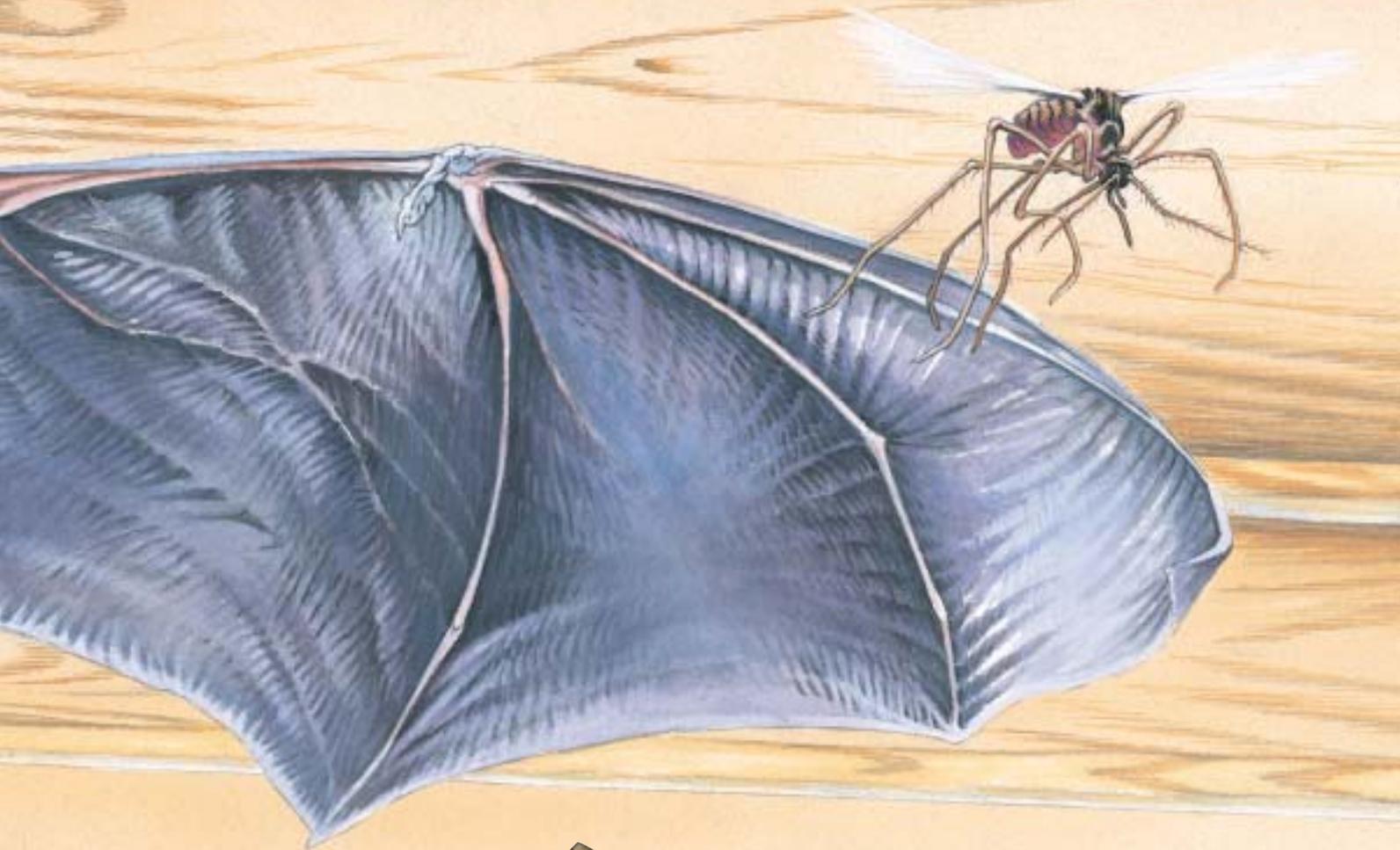


# *Stocking your* **BAT HOUSE**

**E**very year since we moved back to the St. Louis area from out East, I've gone through a spring ritual of rummaging through my garage, trying to find my container of bat guano. Thanks in large part to my wife's hip operation, I don't need the stuff anymore.

*the hard way*  
**A tale of guano, persistence and Providence.**

By Craig Lingle,  
illustrations by David Besenger



My annual guano search started some five years ago. I built a bat house from plans supplied by the Missouri Department of Conservation. I took some liberties with dimensions, and, of course, I used some duct tape, but it turned out all right. I hung it in a good location—not too close to the ground, in a place with some sunlight—and waited for bats to come.

I looked forward to summer evenings in the hammock, watching bats swoop through our yard and decimate the local mosquito population.

It soon became obvious that having a bat house doesn't necessarily translate to having bats. I built it,



but they didn't come. I waited and hoped a bat or two would stop by for a rest, take a liking to the place, and bring back some friends. Problem was, I could never attract that all-important first bat.

The year we put up our bat house, I spent many evenings in the hammock. Rarely did I see a bat swoop through our yard. I regularly checked the bat house. It was always empty. We moved the bat house. Still empty. I felt like I was fishing with the wrong bait.

After a little reading, and after talking with folks from the Conservation Department, I learned that bat guano helps attract bats to a new roost. A mixture of guano and

water spread across the entrance to a bat house sends a strong aromatic message: “Others have gone here before you!”

I figured it would be best to find guano from local bats. A few phone calls narrowed my search to a nearby Missouri state park. The assistant superintendent knew where I could find plenty of guano, but she wanted me to wait until late spring, after the bats had finished overwintering in the rafters of one of the picnic shelters. The following spring she led us to the shelter where we found small piles of guano. I left with a container of bat poop in hand.

Since then I have regularly pasted guano on our bat house, but it never attracted any bats. Last spring my supply was getting low. It was then that my wife unintentionally intervened with her hip operation.

In retrospect, I should have seen it coming. Throughout the previous winter, my wife and kids had said there was something flying in our basement. I would dutifully go down, look around, and deduce that they were nuts. I didn’t believe that a bat could survive all winter in our basement.

“Even if a bat were in our basement, there’s not enough food and water,” I argued. “He’d starve, or more likely die of dehydration.” Their concerns subsided for a few weeks. By April, we’d all but forgotten about our basement bat.

Just four days after her surgery, my wife came home. After so many days in the hospital, she was happy to settle back into her own bedroom, but she could barely hoist herself out of bed to use a walker. We spent the day looking after her, and the kids all gave her a hug before going to bed. It was with great surprise that a few minutes later, while I was reading a bedtime story, I heard the slow clomp of my

**I lifted him up to the mouth of the bat house. He crawled right up inside, with nary a look back. The next day I went out in the morning to check on our little brown bat. When I shone a flashlight in, three bats looked back at me. The bat had returned our favor. He’d brought buddies back with him.**

wife’s walker in our kitchen. She called up the stairs to me. The bat had appeared.

I can’t guess why the bat chose that particular night for his upstairs debut—in the bedroom, no less! When the bat first swooped around the room, my wife was lying in bed. She may have been down, but she still was plucky. She tried hitting it with a large foam pad she had received in the hospital, but the bat was too quick for her.

My wife got dizzy just watching him dash around and around, so she carefully swung herself out of bed up into her walker and began the slow trip out of the room.

I wish I had been there to see her inching doggedly along, tenaciously holding her walker, with that bat flying around her head.

After a little excitement, we were able to catch the bat and place him in an old cage. Once he was subdued, we could see how tiny he was, and yet how vicious he looked when baring his sharp little teeth. Mostly he was frightened and kept hiding beneath some leaves. We kept him a

couple of days to figure out which species he was, and to let the kids see a bat up close.

He was a brown bat, a fairly common species. He’d probably blundered into our basement the previous fall, when the door had been broken and wouldn’t close. Somehow he’d found enough food and water to survive the entire winter. This helped explain the lack of crickets in our basement. A year later, there still aren’t many crickets in our basement.

I thank my wife’s operation for forcing the bat’s hand. Had a bed-ridden female not been in our house, the bat might never have appeared. We determined that Providence had placed him in our hands for a reason. He was the pilgrim bat that would colonize our beautiful bat house.

On a warm spring morning we took him out and, using a stout glove, I lifted him up to the mouth of the bat house. He crawled right up inside, with nary a look back. The next day I went out in the morning to check on our little brown bat. When I shone a flashlight in, three bats looked back at me. The bat had returned our favor. He’d brought buddies back with him.

And so, throughout last summer, we had bats in our bat house. They weren’t there every day, and there weren’t many, but they were there.

This spring, after the warm weather brought the bats out of their winter hibernation, I went out to check our bat house. Much to my satisfaction, a little fuzzy brown ball was inside. I don’t have to spread guano anymore. ▲

## **Bat info**

Information on bats and bat houses can be found on the Missouri Department of Conservation’s web site: [www.missouriconservation.gov](http://www.missouriconservation.gov).



DAVID BEE

June 2004 7



Adult eastern hellbender

# What's HURTING Our HELLBENDERS?

Our largest salamanders are declining at an alarming rate.

By Jeff Briggler, photos by Jim Rathert

**T**he eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*) and the Ozark hellbender (*C.a. bishopi*) are harmless animals that inhabit Missouri's cold, fast-flowing streams. Once plentiful, their populations are now in peril, and the Missouri Department of Conservation is trying to find out why.

Between 1971 and 1973, researchers observed more than 1,000 hellbenders in the Niangua River. By the 1990s, however, the population had declined by 80 percent. Hellbender numbers in the Big Piney, Gasconade, Eleven Point and North Fork rivers showed similar decreases. Overall, hellbender populations declined by an average of 77 percent.

Equally disturbing is the discovery of many hellbenders with deformities, including missing or malformed legs.

In Missouri, hellbenders can grow up to 2 feet long. People have described them as something only a mother could love. They are reddish-brown and blotchy in color, with wide, flat heads, tiny eyes, short legs, loose skin and a very slimy film over their entire body. The film is a protective coating that decreases friction while swimming. It also is a

mild skin irritant to those who come into contact with it.

Hellbenders mostly eat crayfish. They are mainly nocturnal and are seldom encountered. Anglers may catch them on hook and line, however, and giggers might spot them at night with the aid of a light.

Their wide, flat heads make it easy for hellbenders to slip under large, flat rocks on the bottom of fast-moving streams. They usually remain within a home range of less than 70 square yards.

During breeding season in September and early October, female hellbenders deposit between 200 and 700 eggs in a clump. All the eggs are attached by a single strand, however, so their egg masses resemble a bunched string of pearls. After being externally fertilized by male hellbenders, the eggs hatch within four to six weeks. The males remain during this time to guard them.

When the eggs hatch, the larvae that emerge are less than an inch long. During the larval stage, the animals breathe through feathery gills on the side of their head. The larval stage lasts for about two years, during which time a larval hellbender grows to four or five inches long.

At this stage, hellbenders reabsorb their feathery gills and breathe through the many folds of their loose skin. They don't reach sexual maturity until they are about 14 to 15 inches long, which usually takes from five to eight years. Hellbenders may live 55 years in captivity, but in the wild their maximum life expectancy is 30 to 35 years.



Hellbenders like cool, clean water. They often live near springs on Ozark rivers.

## Mystery of the Deep

A multi-agency working group is studying hellbenders to unravel the mystery of their decline. The effort has many components, including captive breeding, survey and monitoring, research and watershed protection.

The St. Louis Zoo and the Mammoth Spring National Fish Hatchery in Arkansas are taking the lead on captive breeding. While young hellbenders produced in captivity may one day be released to the wild, the main purpose of this effort is to preserve genetic stock in case hellbenders are so depleted from Missouri waters that they cannot recover without assistance.

The eastern hellbender is listed as rare in almost every state within its range. It is being considered for inclusion on the federal list of endangered species. The Ozark hellbender lives only in Missouri and Arkansas. It is already a candidate for federal endangered status. Missouri is the only state with populations of both eastern and Ozark hellbenders. Both subspecies were added to the state endangered list in April 2003.

On any given day during the spring, summer or fall,

members of the working group may be seen snorkeling the clear waters of Missouri streams in search of hellbenders. As part of their monitoring and surveying efforts, team members catch, weigh, count and tag hellbenders.

From their efforts, the researchers have discovered a disturbing fact. Not only are there fewer hellbenders overall, but there are proportionally fewer young hellbenders than there were 20 years ago.

Anything that damages hellbender habitat can potentially affect their populations. This includes dams, gravel mining, stream siltation, poor water quality, contaminants in run-off, disease and other factors.

Humans also pose certain threats. People take hellbenders from the wild legally, illegally and accidentally. Scientific collecting was permitted in the past, and many hellbenders were taken for that purpose. They are also illegally taken for the pet trade, and by giggers and anglers.

Gigging hellbenders is against the law. If you see someone gigging hellbenders, report them immediately to your local conservation agent or call Operation Game Thief at 800/392-1111. You can report violations any-

## HELLBENDER HIGHLIGHTS

- Hellbenders are part of the family known as giant salamanders. The largest specimens in North America are about two and one-half feet long. In Asia, members of this family grow to five feet long.
- Hellbenders breathe through their skin. The many folds of skin undulate as water flows around the animal. Capillaries near the skin surface capture oxygen from the flowing water.
- Early references suggest hellbenders were so named because their undulating skin reminded observers of "horrible tortures of the infernal regions." A later reference credits an angler who, upon encountering a hellbender, supposed it to be "a creature from hell where it's bent on returning."
- Hellbenders have many nicknames, including mud-devils, water-dogs, alligators of the mountains and walking catfish.
- Hellbenders are not dangerous. They are harmless, unique animals that depend on humans to keep their habitat intact.



mously, and you may reap a financial reward for cases that are successfully prosecuted.

One problem with diagnosing the plight of hellbenders is that their populations are declining even in streams with relatively stable habitat, such as the Current and Jacks Fork rivers.

The deformities are truly mysterious. There's no indication of injury, which would be the case if predators like otters or minks were responsible. Researchers are taking blood samples to determine if a detectable disease is present and to check for compounds like estrogen, which can be found in run-off contaminated by animal waste. Naturally, the deformities are unsettling. If something in the water is causing this, then it might affect people, too.

The working group hopes to be able to determine if the hellbender is the "canary in the coal mine" for Ozark streams. They want to know whether their decline is part of a natural population cycle, or if it is evidence of serious habitat degradation. It's important to find out whether human activities, including pollution, are causing the decline, and whether the hellbender's decline is reversible.

## ***What You Can Do To Help***

You can help the hellbender and the people who are trying to save them.

- Report hellbender sightings to Jeff Briggler at 573/522-4115, ext. 3201, or e-mail <jeff.briggler@mdc.mo.gov>. Because they are on the streams at night, giggers probably see more hellbenders than anyone else. If you gig, report how many hellbenders you see.
- Protect hellbender habitat from disturbance.
- If you catch a hellbender while fishing, cut the line to release it.
- Report illegal taking of hellbenders.
- Join a Stream Team to get involved in habitat protection and water quality monitoring.

Hellbenders have a rightful place in Missouri streams. They are an integral, fascinating and harmless component of a healthy ecosystem. With your help, they may once again flourish in their native waters. ▲





Where else can you fish on a lake named for your favorite author?

**M**ark Twain wrote, "There is no use in your walking five miles to fish when you can depend on being just as unsuccessful near home."

No matter where you live in Missouri, however, a trip to Mark Twain Lake in Monroe County makes great sense. Stay near home and be unsuccessful, if you want, but you'll be missing out on fine fishing. Whether you fish for crappie, bass or catfish, Mark Twain Lake seldom disappoints.

At 18,000 acres, Mark Twain Lake is the largest reservoir in north Missouri. Clarence Cannon Dam, which holds back the Salt River to form the reservoir, was authorized by Congress in 1962. The lake filled in 1984. In addition to flood control, the dam and its reservoir provide hydroelectric power, wildlife habitat and outdoor recreation—especially fishing.

Crappie are the bread and butter fish here," said Ross Dames, the Conservation Department fisheries biologist for Mark Twain Lake. Around here, people's livelihoods rise and fall with the crappie. If the crappie fishing is good, the parking lots are full."

The lake drains a large watershed and is notorious for fluctuating water levels and turbid—or muddy—water. "It clears up during midsummer and fall," Dames said, "but it's turbid most of spring and early summer. And any time it rains, the lake comes up."

# An Angler's Guide to Mark Twain Lake

By Tom Cwynar, photos by Cliff White



Crappie attract most of Mark Twain Lake's anglers. The fishing ebbs and flows in response to water levels and gizzard shad reproduction, but it's almost always good.

## CRAPPIE FISHING

Water levels directly affect crappie success at Mark Twain. Gizzard shad are the primary forage species in the reservoir, but adult gizzard shad are too large for crappie to eat. When water levels are high in spring and early summer, shad reproduction increases, providing more food for crappie.

"In the last four years, I've seen the schools of young shad so thick you felt you could walk on them," said Fred Withrow of Winfield. "The small shad make them crappie grow."

"I love that lake!" Withrow said. He's been fishing Mark Twain Lake since it filled. "I'm up there all the time—two or three times a week—from early spring to December."

Lately he's been fishing the middle fork, launching at the Shell Branch ramp or the Highway 107 ramp, but in other years he's focused on either the north fork or the south fork.

"They're all good," he said. "I just switch to get a little variety."

Withrow says Mark Twain is one of the most consistent producers of crappie of all the lakes he's fished. "There have been a few times a year when I may not get more than five or six," he said, "but I always catch fish when I go to Mark Twain."

He says he catches a lot of smaller crappie, but usually doesn't keep any fish under 10 inches in the spring and summer, and nothing under 11 inches in the fall.

"I do my best in the fall," he said. "The fish are a lot bigger and there's a lot more of them. I tell everybody the crappie are spending the summer fattening up so I can catch them in the fall."

In the spring, Withrow tries the banks first. If he

"Do not tell fish stories where the people know you; but particularly, don't tell them where they know the fish."

— *Mark Twain*



doesn't find fish, he moves out, fishing the flooded timber in the coves. Most of the time in summer he fishes about 6 feet down, and sometimes as shallow as 4 feet. Later in the summer, he'll look for dropoffs, roadbeds and old fencerows, but he still doesn't fish very deep. Only in the fall does he find crappie much deeper than 12 feet.

"Crappie really are warm water fish," Withrow said. "Sometimes you'll catch one in the summer and put your hands on it, and it'll feel like it's already been cooked."

He usually fishes with jigs with either a minnow, Crappie Nibble or tube bait attached. His favorite tube color on Mark Twain is a blue body with a white tail.

"In the spring, people catch a lot of crappie and catfish off the banks, but you really need a boat to fish the lake well," Withrow said. "The best way to learn to fish the lake is to watch other people and talk to other people. Find out what they are catching and where."

Brad Stamp, a Corps of Engineers park ranger who works out of Mark



A day at Mark Twain Lake often ends at the fish cleaning stations.



Spacious ramps offer easy access to the lake's jungle of drowned timber. Mark Twain Lake's coves are full of cover—and fish!

Twain Lake's management office, also keeps tabs on the crappie. His strategy is to throw unbaited, 1/16-ounce, weedless jigs with tubes into heavy cover. He, too, favors a tube with a blue body and a white tail, but when the water is murky, he will try red and chartreuse or black and chartreuse tubes.

Like many Mark Twain Lake anglers, Stamp looks for the clearest water. "Some mud doesn't matter," Stamp said, "but when the water gets like chocolate milk it can be unfishable."

Stamp said fish locations are always changing because of the fluctuating water level.

"Just because you caught fish in one place the last time out doesn't mean you'll catch them again," he said. His normal approach is to move slowly with the trolling motor, casting into thick cover until he finds crappie.

## BASS FISHING

Largemouth bass fishing is very popular at Mark Twain Lake. Clyde Oligschlager of Perry has fished bass waters all over the nation on the professional bass fishing circuit, but these days he limits himself to local buddy tournaments on Mark Twain.

He said Mark Twain Lake has been very good for bass fishing for about five years, and this year has been one of



Most anglers catch their crappie on jigs and tube baits.

the best in terms of large fish. "But, by gosh, it can be challenging," he said.

He said Mark Twain, with its clearcut main lake and coves full of flooded timber, is like a miniature Truman Lake. He said the lake fishes like any other reservoir, but it seems more finicky.

"We like to say that if you can consistently catch bass on Mark Twain, you can catch them anywhere," he said. "It's not that the fishing isn't good. It's just that the lake can completely shut down on you. You might get on a pattern during the week, but more likely than not it won't hold during the weekend."

Oligschlager said angling pressure from numerous tournaments probably has made the lake's bass smarter.

"There are a couple hundred bass tournaments a year," he said. "All of them are catch and release, though. Tournament fishing value bass too much to keep them."

Anglers can catch bass in shallow water—down to 12 feet—all year long at Mark Twain. Oligschlager suggested newcomers to the lake start fishing with a Texas-rigged plastic worm.

"Tests in aquariums have shown that the plastic worm is the lure the bass forget the quickest," he said.

He said shallow-diving crankbaits work well in flooded timber in spring and early summer, and topwater

"We boys were told not to go fishing. For that reason we went." — *Mark Twain*

baits work well early and late in the day when the lake warms up. Summer anglers also do well casting big worms into the tree tops.

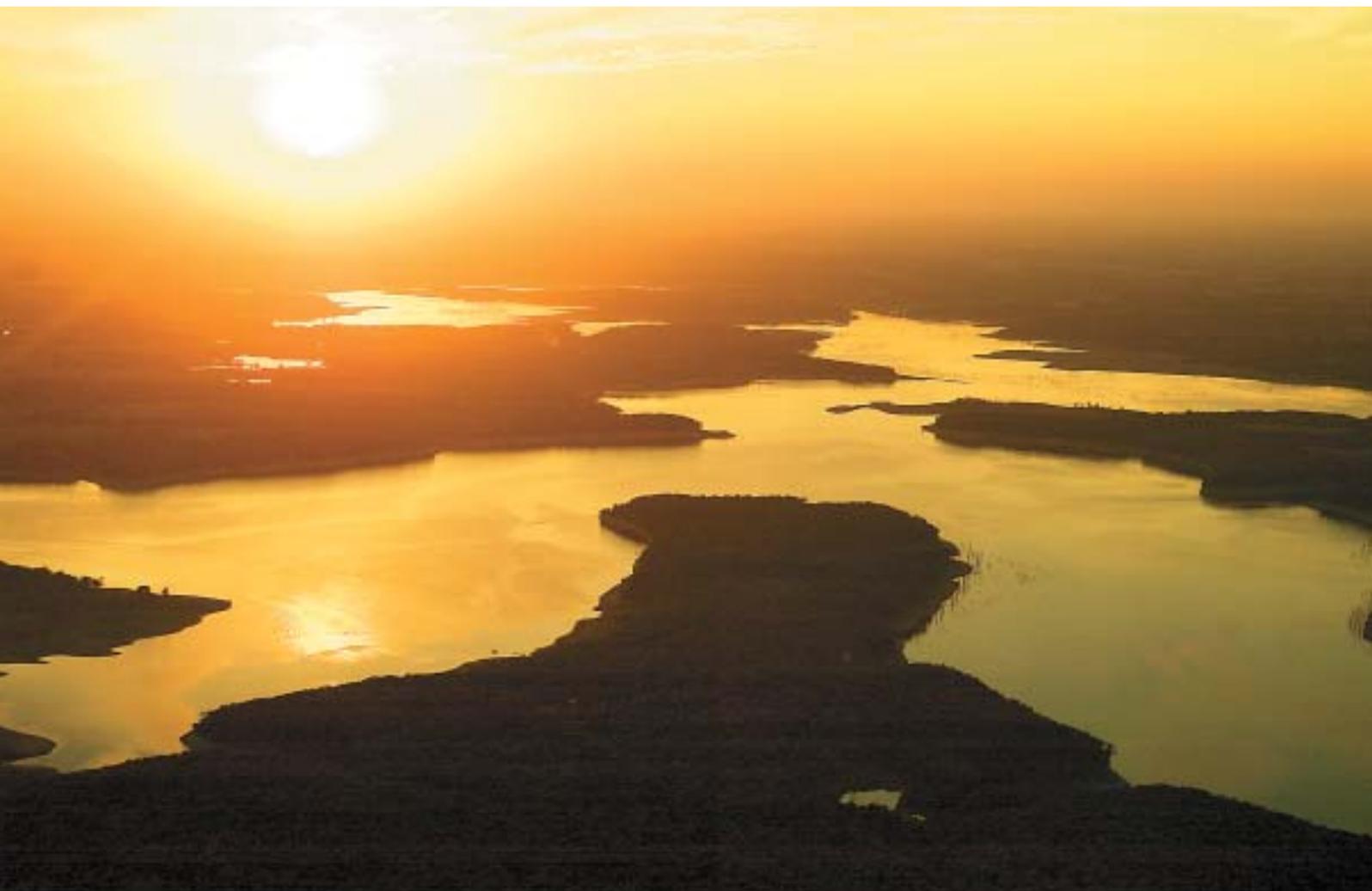
Oligschlager believes Mark Twain Lake holds bass that seldom see a lure.

"Most bass fishermen tend toward the shoreline, and the fish there get hit hard. Some structure away from the shoreline, however, like old road beds and humps and the edges of feeding flats, doesn't get fished."

Night fishing also can be good on the lake. Anglers should be extra cautious, however. The lake is so dark at night that it's easy to become disoriented. Adding to the risk of both night and day fishing are the boating hazards of flooded timber and fluctuating water levels.

## CATFISHING

Lots of pictures of big catfish—some over 50 pounds—are pinned on the bragging boards at baits shop near



Mark Twain Lake. Russ Withrow describes trotlining on Mark Twain as awesome.

Like most catfish anglers, he tends toward the back of coves. He'll set lines in 3 or 4 feet of water for channel cats. His favorite bait is cut leeches.

He runs his flathead lines a little deeper, about 8 feet, and he baits them with small goldfish or small perch (3- to 6-inch sunfish or bluegill). He likes to place his flat-head lines along channel or drowned field edges.

## OTHER FISHING

Although crappie, bass and catfish are the reservoir's "Big 3," Mark Twain Lake contains a wide variety of other fish, including bluegill.

White bass are showing up more often. Anglers sometimes catch them when fishing for crappie, but they've also learned to target them in open water. White bass sometimes "herd" gizzard shad to top of the water. Casting a spinner, spoon or small crankbait into a surface disturbance often results in jolting hits and fast action.

Walleye fishing used to be better on Mark Twain, but the lake still yields some big fish. Mark Twain Lake stands to benefit greatly from the Conservation Department's current Walleye Initiative, which aims at increasing walleye fishing opportunities in lakes throughout the state.

## VISITING MARK TWAIN LAKE

In 2002, the Corps of Engineers recorded the highest lake visitation ever. According to Dames, many of the anglers come from the St. Louis area, but Iowans and Illinoisans also have discovered the lake.

Mark Twain Lake features excellent facilities. Except for a few informal hunter/angler access points, boat ramps are wide and well regulated. The Corps ramps charge a small daily or annual fee, while the state park ramps allow you to launch for free.

Although the lake, which averages about a mile wide and 29 feet deep, attracts a lot of boaters and anglers, it offers a completely different atmosphere than Lake of the Ozarks or other reservoirs.

"There are no private docks and only two marinas," said Dames, "Mark Twain has more of a remote atmosphere, almost a wilderness experience. You're not going



Timber lines mark channel edges. Fluctuating water levels make navigation tricky.

to see a lot of lights or activity, and you might have to drive 10 or 15 miles to find fast food."

That's a price many of us are willing to pay for close-to-home fishing in a near-wilderness setting. ▲

## Information Please!

- View the Conservation Department's annual report of fishing prospects for Mark Twain Lake at [www.missouriconservation.org/fish/prospects/detail.htm#75](http://www.missouriconservation.org/fish/prospects/detail.htm#75).
- To view the weekly statewide fishing report which includes current information on Mark Twain Lake go to [www.missouriconservation.org/fish/fishrt/](http://www.missouriconservation.org/fish/fishrt/).
- Check the fishing tournament schedule on Mark Twain Lake by calling the Corps of Engineers management office at 573/735-4097 or going to [www.mwbt.com/upcommarktwain.htm](http://www.mwbt.com/upcommarktwain.htm).
- Fishing can be better when they are generating power at the dam. For a schedule of releases, call 918/595-6779 and punch in Code #19 for Clarence Cannon Dam.
- A map of the lake will help you almost as much as a bucket of bait, and it costs about the same. You can find a waterproof "Fishing Hotspots" map of Mark Twain Lake almost anywhere fishing gear is sold. Remember that depths listed on maps are for normal pool. You will have to make adjustments for high or low water.



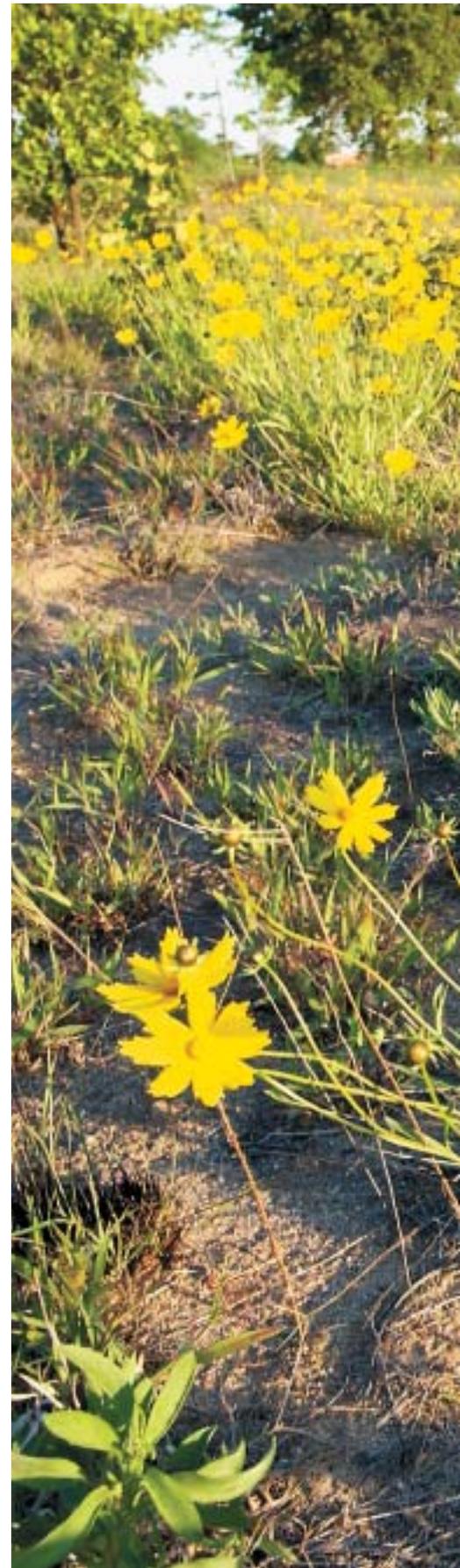
# A Prairie IN THE Swamp

Desert-like sand prairies are disappearing from southeastern Missouri. By A. J. Hendershott, photos by Jim Rathert

**S**outheast Missouri receives more rain than any other part of the state, but it also harbors the rarest of dry habitats—sand prairies. These unique prairies are a major link to geologic history and are a major influence on the cultural history of the region.



The eastern spadefoot (above) and coreopsis (overleaf) are well adapted to the arid conditions of Missouri's sand prairies.





Missouri's sand prairies are dry islands in a land of swamps. To understand how they came to be, you have to look back through Missouri's geologic history. Much of Missouri's lowlands were once inundated by a shallow gulf. The Ohio River emptied into that gulf, dumping large volumes of sand.

When the glaciers that inched across North America melted, they released enormous volumes of water that flowed down what is now the Mississippi River and its tributaries. The relentless current eroded sand plains that had long before been deposited by the Ohio River. When the super floods receded, only two long sandy ridges remained.

One of these sand ridges is called the Sikeston Sand Ridge. It runs north and south from Benton Hills to the town of East Prairie. Interstate 55 runs along this ridge. The other ridge, named for Malden, Missouri, begins south of Crowley's Ridge and runs down through Malden into Arkansas.

Factors influencing dry conditions include elevation, heat and fire. Because they are 10 to 20 feet above the

surrounding land, the sand ridges allow water to rapidly percolate down into the ground water. Although the sand is mixed with some soil particles, it drains much faster than surrounding soils. This draining enhances dry conditions favorable for prairie formation. Heat, provided by sunlight, also dries sand ridges.

Fast drainage and evaporation make sand ridges a challenging environment where only drought-tolerant plants can survive.

Periodic fires also help shape sand prairies. These fires remove dead leaf litter and color the soil black. Darkened sand heats up faster and stays warm longer than light-colored sand. Fires also improve growing conditions by removing dead grass and wildflower leaves and releasing the nutrients from dead plants into the sand. This process would take months and even years under passive decomposition.

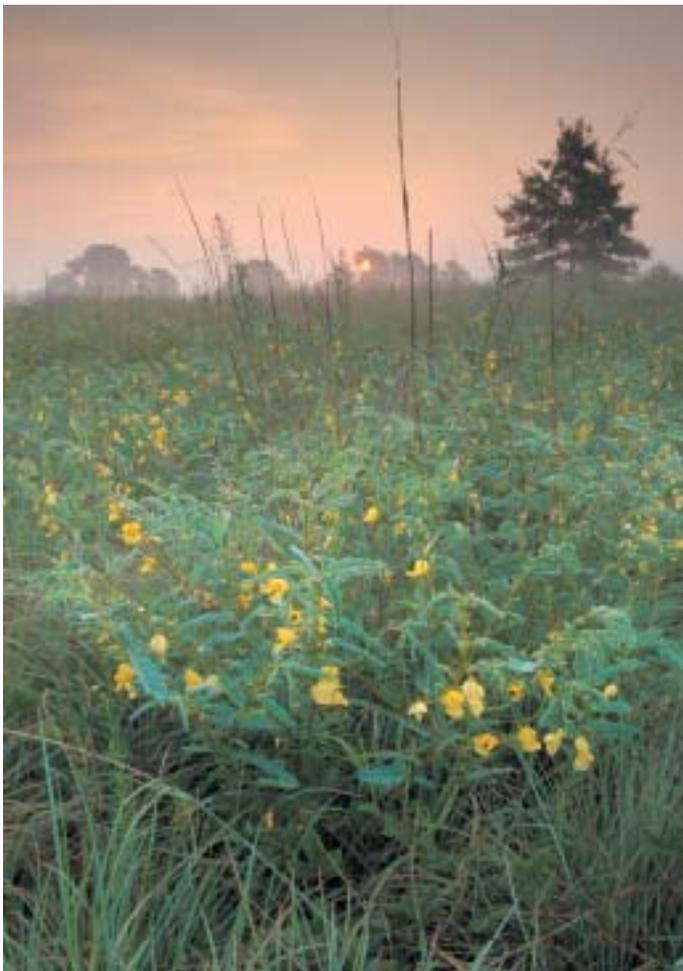
Historically, fire burned the sand prairies every five to eight years, killing sprouting oak trees such as blackjack or post oaks.

Another challenging factor facing sand prairie life is rapid heating and cooling. Just like deserts, sand prairies heat and cool quickly. These rapid and dramatic temperature changes can make life impossible for plants not adapted to these conditions.

Unique plants live on sand prairies, including prickly pear cactus, butterfly pea, puccoon, clasping milkweed and creeping St. John's wort. While these plants are noteworthy, the grasses and sedges are the real stars of the sand prairies. One distinctive grass is the dominant split-beard bluestem. The split-beard is a warm-season grass well suited for sandy conditions. Its silvery seed heads dominate the sand prairie landscape.

Perennial plants of sand prairies tend to have narrow leaves and tiny hairs to limit water loss. These plants also have deep roots to access water, and they grow in tufts to reduce exposure to winds that may dry them out. Annual plants borne from seeds have slender leaves, as well, and have few branches on their stem to prevent water loss. They also have fibrous roots that maximize water collection when water is available.

This natural community also is hard on animals, but some animals manage to cope. Two frogs that have adapted well to sand prairies are the Illinois chorus frog and eastern spadefoot. Both spend months burrowing and feeding underground. They only come out to breed. Their eggs hatch faster, and their tadpoles metamorphose faster than those of other frogs. These adaptations help them take advantage of the short life of sand prairie pools. They are rarely seen and are more easily detected by their calls in breeding season.



A.J. Hendershott

Southeast Missouri once contained about 60 square miles of sand prairies, but only about 1 percent remains today.



Lark sparrows (above), bobwhite quail, mourning doves and other grassland birds inhabit sand prairies.

Another animal more easily heard than seen is the northern mole cricket. Mole crickets live on wet swales, pond banks, grasslands or forested areas dotting the sandy ridges. A close relative, the prairie mole cricket, used to live on sand prairies. Like northern mole crickets, they burrowed about, eating roots of prairie plants. This prairie cricket sings from a hole in the ground. The hole functions as an amplifier, making the call louder. Due to habitat destruction, the prairie mole cricket is believed to be extirpated from southeast Missouri. It has not been recorded here since 1971.

Huge herds of bison once roamed all over the southeast region. Although they roamed the swamps eating giant cane, the sand prairies were probably a regular haunt. Elk were common on these prairies and doubtless fed many settlers and explorers. Thomas Beckwith, in his book on the settlement and settlers of Mississippi County, opined that both of these creatures were gone from Mississippi County by 1860.

A wide variety of upland game animals such as bobwhite quail, mourning doves, white-tailed deer and cottontail rabbits also use these sandy meadows. Joining them are a variety of grassland songbirds, including rough-winged swallows, bluebirds, savanna sparrows,

swamp sparrows, dickcissels, lapland longspurs and meadowlarks. Racerunner lizards and fence lizards also thrive on the sandy grasslands. Because there is now less prairie habitat for these animals to use, their numbers are lower than they could be. Habitat loss not only reduces population sizes, but also it also negatively impacts genetic diversity.

At one time there was a considerable amount of prairie in southeast Missouri. Dr. Walter Schroeder, lecturer at the University of Missouri, reviewed old surveyor notes of the entire state looking for descriptions of prairie. He found conservative estimates of 60 square miles of sand prairie in southeast Missouri. By the time surveyors did their work, he noted, many sections of the sand ridges were already settled. This means that the prairie was already converted to farm fields, and fires were suppressed to protect barns, homes, fences and livestock and to keep families safe. Without natural fires, trees turned much of the sand prairies into scrubby forest. In fact, before European settlement, as much as 150 to 175 square miles of prairie may have occupied the sand ridges.

Many of the towns in the Bootheel that aren't on Crowley's Ridge were founded on sand ridges. Booming

towns needed land to prosper, and tallgrass sand prairies were the first to be converted to agriculture. Big bluestem and switch grass were major components of these grasslands. These grasses benefit from high organic content in the sand and moderate moisture.

Next in line were the sandy areas with less organic potential and shorter grass. Today short grass prairies remain only on the driest and sandiest locations.

The sand prairies were the sites of major travel lanes north and south. Living on the sand ridge also gave people an opportunity to live on a dry site that offered them a staging ground to access the swamps. Traveling east and west across the swamps was difficult. Pole roads made of cypress poles were built to facilitate travel between the sand ridges. The town of Portageville is one such town from where merchants portaged goods across the pole road to the Malden sand ridge.

Malden Ridge was once the site of the Grand-west-Rosebriar prairies. They stretched north from Kennett through Malden and into Bernie. Sand prairies were less abundant on the Malden Ridge, but those that existed were similar to grasslands found to the east. Higher organic content in the sand probably allowed more moisture to be retained, contributing to better tree growth. Not surprising, agricultural performance on that land was better, too.

The irony of a prairie in the middle of a swamp carried over to place names in southeast Missouri. The most notable is the town of East Prairie. It was named because it was the prairie east of the other prairies found on the Sikeston ridge. Many of the names are now forgotten, but a few residents still recall that the town of Charleston was once known as Matthew's Prairie. A few folks still remember Long Prairie, yet another grassland south of Sikeston.

The whole Sikeston Ridge was considered to be one large prairie by early explorers such as John Breckinridge. Surveyors called this grouping of grasslands Big Prairie, while some settlers called it Grand Prairie. John James Audubon recorded a visit to the "Little Prairie of southeast Missouri." The particular section he visited was south of East Prairie. This is where he viewed and created his first painting of a Bald Eagle. Perhaps it is no coincidence that East Prairie High School's mascot is the eagle.

Today, less than perhaps 1 percent of the original sand prairies remain, and even this small area is threatened by development. Many plants and animals requiring sand prairie habitat are of major conservation concern. No sand prairies are publicly owned. Landowners wanting to restore or conserve sand prairie remnants on their property can contact their nearest Conservation Department office. ▲



Blue toadflax



Spiderwort

# Cottonmouth Confusion

*Odds are that the snake you see in the water is not venomous.*

By James Dixon

***“Uh-Oh! I think I just saw a snake in the water!”***

Those words have needlessly ended a lot of fishing trips. Some people are so spooked by water snakes that the mere sight of one puts an abrupt end to any outing. Some uninformed outdoorsmen even go out of their way to kill them.

Many people falsely believe that any snake seen in or near the water is a water moccasin, also known as a cottonmouth. Along with cottonmouths, there are seven different species of non-venomous, semi-aquatic snakes found in our state and in most of Missouri. These non-venomous water snakes vastly outnumber the much-



Jim Rathert

Western cottonmouth

feared cottonmouths, and they are the ones that usually frighten anglers and other stream lovers.

Most of Missouri's non-venomous snakes that are mistaken for cottonmouths belong to a single genus, *Nerodia*. Missouri is home to five species within this genus, and they share some interesting characteristics. All five primarily eat fish and amphibians. They don't have venom, but they put up quite a bluff when cornered. When threatened, they flatten their head and neck in order to look larger. They also bite and are known to release a pungent musk from a gland near their tail.

Admittedly, it can be difficult to identify a snake when you unexpectedly encounter one in the wild, especially if it is in the water. The following snakes are the ones most often mistaken for cottonmouths.

## Northern Water Snake

(*Nerodia sipedon*)

The northern water snake is the most common semi-aquatic, non-venomous snake in Missouri. Ranging statewide, it often shares habitat with cottonmouth snakes and is the snake most often misidentified as a cottonmouth. This snake is brown to orange. The bands crossing its back are darker than those on a cottonmouth. Its belly is cream colored with irregularly spaced half-moons or spots of orange or red.

On a warm spring day it wouldn't be unusual to see half a dozen northern water snakes while you're out fishing. You might even see one with its head protruding from the water like a periscope.

## Diamond-Backed Water Snake

(*Nerodia rhombifer*)

This is the largest species of water snake found in our state. The Missouri record is 51 inches long. The non-venomous, diamond-backed water snake ranges across large sections of Missouri, but it is not found in the Ozarks or extreme northern Missouri. It prefers the swamps, oxbow lakes and marshes common in the Bootheel and along the state's big rivers. In early summer and fall you may see them basking on rocks and logs, but during the heat of July, August and September they are mostly nocturnal.

This snake differs from cottonmouths by having a series of dark brown blotches along its back that are connected in a chain-like pattern.

## Yellow-Bellied Water Snake

(*Nerodia erythrogaster*)

As an adult, this medium-size, non-venomous snake ranges from 30 to 48 inches long. Like the diamond-backed water snake, it inhabits the still waters of

swamps, ponds and oxbow lakes. It does not live in the Ozarks, either. In eastern Missouri, it ranges from the Bootheel in the south as far north as Pike County, just above St. Louis. It can also be found in roughly the western third of the state.

Adults of this species can be identified by their gray to greenish gray or brownish black color. The adults lack any distinct pattern along their backs. The belly of the snake is yellow with no markings.

## Broad-Banded Water Snake

(*Nerodia fasciata*)

In Missouri, this species is restricted to lowland swamps and oxbow lakes of the Bootheel. Adults average from 22 to 36 inches long. Non-venomous broad banded water snakes are easily identified by wide brown or black bands separated by a cream yellow color.



Northern water snake

Jeff Briggler



Broad-banded water snake



Yellow-bellied water snake



Diamond-backed water snake

Top photos by Tom R. Johnson

Jim Rauber

## Graham's Crayfish Snake

(*Regina grahamii*)

This snake is found statewide except in the Ozarks. Adults range from 18 to 28 inches long. These non-venomous snakes are very secretive. They eat mainly soft-bodied crayfish and prefer still or barely moving water, such as ponds, slow streams and marshes.

Many are killed simply because they are found near the water and believed to be cottonmouths, but these inoffensive creatures are reluctant to bite even when handled.

Unlike cottonmouths, this snake is brown with a yellowish stripe along its side. A faint tan stripe may be present along its back. Its belly is cream colored and has a very faint row of gray dots down the midline.

## Other Semi-Aquatic Snakes

Though usually not mistaken for cottonmouths, there are two other semi-aquatic, non-venomous snakes found in Missouri: the Mississippi green water snake (*Nerodia cyclopion*) and the western mud snake (*Farancia abacura*).

The Mississippi green water snake is indigenous to southeast Missouri. It is not often seen, let alone mistaken for a cottonmouth. In fact, the snake hasn't been seen in Missouri since 1994 and is listed as an endangered species in the state.

The coloration of the western mud snake has probably saved its life many times. Though it inhabits the same swampy areas of southeast Missouri as the cottonmouth, it is black with a distinctly red belly. The red coloration extends up onto the sides of the snake and is quite visible, making it easy to differentiate this snake from a cottonmouth.

## Cottonmouth

Many people get confused when trying to identify this venomous snake. Even the name can be confusing. The cottonmouth is also called water moccasin, lowland moccasin, trapjaw and gapper. All of these names refer to the western cottonmouth, *Agkistrodon piscivorus*.

Adult cottonmouths are dark colored, ranging from olive-brown to black. Their bellies are cream colored and have dark brown or black blotches. Adults have a white upper lip.

Also, adults are heavy bodied, with a head noticeably wider than the neck. Young cottonmouths do not resemble adults. They are lighter in color and have 10 to 15 crossbands on their back. The tip of the tail is yellow in newborns. As with all venomous snakes in Missouri, cottonmouths have elliptical pupils, like those of a cat. They also have a visible pit between the nostril and the eye.

While it is true that venomous snakes have arrowhead



Jim Beahert

Graham's crayfish snake

shaped heads (due to the position of the venom glands at the rear of the jaw), this can be difficult to ascertain in the field. Remember that even a non-venomous snake may flatten its head and neck when it feels threatened in an attempt to discourage an aggressor. This can make it appear to have a diamond-shaped head.

The behavior of a snake can be a clue to its identity. When in the water, cottonmouths tend to swim with their heads held high, making their backs protrude above the surface of the water. When threatened, they open their jaws wide, a posture called gaping, to display the cottony white lining of the mouth. No other snake does this.

Geography can also provide an important clue. Cottonmouths do not occur north of the Missouri River, and in the Ozarks their distribution is spotty, normally restricted to cool, spring-fed creeks and small rivers. In southeastern Missouri they occur in cypress swamps, oxbow lakes and drainage ditches.

Whether the snake you see is a cottonmouth or another species, snakes are an integral part of Missouri's wildlife community and play vital roles in their respective ecosystems. They are also protected by Missouri's Wildlife Code. While snakes can evoke irrational fear in those who encounter them, it is still unlawful to kill, harm or harass them.

Those who fear snakes often misinterpret their actions. A snake swimming toward you in the shallows isn't planning to attack you. It's either stalking minnows or frogs, or simply going somewhere. If one approaches you, toss a stick or stone in its general vicinity, and the snake usually will avoid you.

If you'd like to learn more about aquatic snakes in Missouri, visit your local nature center or conservation office to purchase a copy of *The Amphibians and Reptiles of Missouri*, by Tom R. Johnson. ▲



Western cottonmouth

Jim Rathert



Western mud snake

Jim Rathert



## Natural diversity returning to Ozarks

If botanists were trained in public relations, the brilliant yellow wildflower known to scientists as *Helenium virginicum* would have a more descriptive common name than Virginia sneezeweed. This particular plant once was thought to exist only in Virginia until it turned up on private land in Missouri.

The Show-Me State's sneezeweed population is not currently threatened. To make sure it stays safe, the Conservation Department is trying to establish the plant on suitable habitat at Tingler Prairie Natural Area in Howell County. So far, the plant is thriving there. This population on a permanently protected area could provide planting stock for additional restoration work on other areas.

Tingler Prairie is a natural place for many other unusual things, such as several species of orchids and prairie flowers and grasses. Sinkhole ponds harbor buttonbush, water hyssop, cardinal flower, Michigan lily, blue flag and showy white swamp hibiscus. In all, the area supports nearly 300 plant species and abundant wildlife.

A mowed trail provides access throughout the area. To visit Tingler Prairie, take Highway 17 six miles south from U.S. Highway 63 at West Plains. Take County Road 9100 west to County Road 8110 and then go south 1/4 mile to the parking lot on the left.



## Venison donations top 88 tons

Missouri hunters donated 88.7 tons of venison to the needy last year. The massive contribution was made possible by strong support from Missouri businesses.

The donations came through the Share the Harvest program. Share the Harvest takes teamwork. Local sponsoring organizations, such as a conservation groups or civic clubs, partner with meat processors and food banks to make the program work. Sometimes local businesses contribute cash to pay for processing. The Conservation Federation of Missouri (CFM) administers the program.

Last year an anonymous corporate donor gave Share the Harvest two refrigerator trucks worth approximately \$100,000. Bass Pro Shops, Shelter Insurance, the Safari Club International and the Conservation Department all put up money to defray meat processing costs and encourage more donations. Donating venison costs hunters nothing in several local Share the Harvest programs.

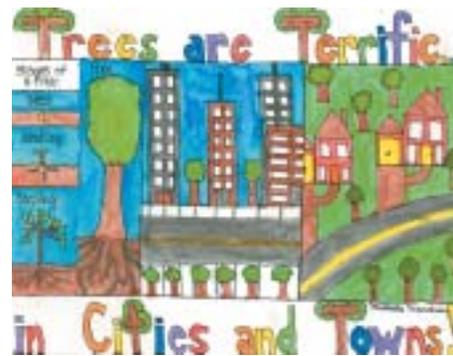
The Fall Deer and Turkey Hunting Information booklet includes a list of Share the Harvest programs statewide. For more information about Share the Harvest, visit <[www.conservation.state.mo.us/hunt/deer/share/](http://www.conservation.state.mo.us/hunt/deer/share/)> or contact the CFM at 573/634-2322, <[mofed@socket.net](mailto:mofed@socket.net)>.

## BALLWIN YOUTH WINS Arbor Day poster contest

Michelle Marchiony, a fifth-grade student at Holy Infant School in Ballwin, is the Missouri state winner in the 2004 Arbor Day National Poster Contest. She received a \$50 savings bond from Forest ReLeaf of Missouri and a framed certificate. Her teacher, Theresa Walker, received a Trees Are Terrific Curriculum Kit, and the Conservation Department planted a commemorative tree on the school grounds. Marchiony's poster will go on to the national competition.

Judges from the Missouri Community Forestry Council, the Missouri Parks & Recreation Association, Forest ReLeaf of Missouri and the Conservation Department picked Marchiony's entry from a field of more than 2,000 entries from fifth-graders from 67 schools. The contest, sponsored by the National Arbor Day Foundation and Toyota Motor Corp., asked students to create a poster reflecting the theme "Trees are terrific. . .in cities and towns!"

Visit <[www.arborday.org](http://www.arborday.org)> for more information about the contest, for online learning opportunities or to request educational materials.





## DNR OFFERS BIG-RIVER WORKSHOPS

The Missouri Department of Natural Resources (DNR) is offering workshops to help participants understand how the Missouri and Mississippi river watersheds work and explore the rivers' many uses, from drinking water and fishing to conduits for waste water. Also included will be training on how to get involved in river conservation and boat trips to see river-based activities firsthand. Workshops will take place June 11-12 in Columbia (college credit available) and Oct. 16 in Kansas City. To register for a workshop or for more information, contact Bryan Hopkins at 800/361-4827 or 573/751-3443 or visit <[www.dnr.mo.gov/oac/river-cleanup.htm](http://www.dnr.mo.gov/oac/river-cleanup.htm)>.

## Burr Oak Woods to host BioBlitz

Burr Oak Woods Conservation Area will host the third "BioBlitz" June 11-12. During the event, naturalists will converge on the 1,000-acre area to conduct an intensive biological inventory.

This year's BioBlitz is sponsored by the Conservation Department and Kansas City WildLands. Participants will use technology ranging from butterfly nets to bat-detecting sonar to document as many plant and animal species as possible in 24 hours. The wide variety of habitats found on this year's site, including streams, ponds, prairies, savannas and glades, promise to produce a large number of species.

The public will get to view specimens gathered during the event at Burr Oak Woods Conservation Nature Center from 1 to 4 p.m. June 12. Visitors also can visit educational displays and ask questions of experts in many fields of biology. Youth naturalists will conduct their own "Mini-Blitz." Environmental educators are encouraged to participate in this event.

More information is available online at <[www.kcwildlands.org](http://www.kcwildlands.org)>, by phone at 816/561-1061, ext. 116, or by e-mailing <[linda@bridgingthegap.org](mailto:linda@bridgingthegap.org)>.

## TRAPPERS TO MEET IN COLUMBIA

The National Trappers Association Convention will take place at the Columbia Fairgrounds Aug. 12-15. The event features hundreds of vendors selling everything from tanned furs to outdoor collectibles and all kinds of hunting and fishing equipment.

Admission is \$10. This includes hourly trapping and skinning demonstrations, seminars on mushroom hunting, photography and other outdoor skills and family activities, such as youth and adult trap-setting contests. Furs, collectible knives and outdoor equipment of every description go on the auction block Friday night. For more information, contact Chris Bezio, <[CBEZIO@msn.com](mailto:CBEZIO@msn.com)>.



## Hunting, fishing privileges extended for military personnel sent out of state

Military personnel who purchased Missouri hunting, fishing or trapping permits and then were mobilized and deployed outside the state can get replacement permits free of charge. The Conservation Commission decided in April that military personnel are sacrificing enough without losing privileges they already paid for. The Conservation Department will issue replacement permits to military personnel with documentation of their deployment.

## Midwinter count finds 2,545 bald eagles

Warm weather and an abundance of waterfowl contributed to a strong showing during the midwinter eagle survey coordinated by the Missouri Department of Conservation Jan. 4-9. This year's survey turned up 2,545 wintering bald eagles. That is 331 more than last year and 139 fewer than in 2002. This year's number is well within the normal range.

Nearly 170 Conservation Department employees took part in the 2004 midwinter eagle survey. Besides the bald eagles, they counted one golden eagle, 466,932 snow geese, 128,246 Canada geese, 641,185 ducks, 17 trumpeter swans and 12 swans of undetermined species.





## MAD about MUSHROOMS?

Lots of Missourians comb the woods for morel mushrooms each spring. A few indulge a taste for puffball mushrooms in the fall. But for sheer mushroom madness, you have to join the Missouri Mycological Society (MOMS). The group's fascination with fungus spans the entire year and leads to some of the most creative events in the nature-loving world.

For example, in a month not normally associated with mushroom hunting, 25 fungus fanciers gathered at the St. Louis Art Museum in January for the group's Mushroom Art Foray. They spent several hours hunting for mushrooms in paintings, sculptures and other works of art.

In February, the group held its annual winter luncheon, dining on such fungus-based delicacies as venison with morels, chicken-of-the-woods and bacon spring rolls, fettuccini with black trumpets and sticky rice-mushroom medley.

When the weather warms, MOMS members are in the woods hunting mushrooms almost every weekend. "Morel Madness," "Sweat 'n Chanterelles," a shiitake farm foray and much more are on the annual agenda. The events bring together neophytes, serious mushroomers and professional mycologists in a relaxed atmosphere.

New mushroom enthusiasts can get an introduction to the sport of mushroom hunting at four upcoming "Beginning Mushrooms" events. For more information, contact MOMS President Maxine Stone, 314/963-0280, <VeryMaxine@aol.com>.

## MDC's second director served with national distinction

William E. Towell, the Conservation Department's second director, died May 2 at his home in Southern Pines, N.C. He was 88.

A native of St. James, Towell worked for the Conservation Department for 29 years. He served as a forester headquartered in Sullivan, a farm forester out of Kirksville and senior forester in Jefferson City, before leading the agency from 1957 through 1967.

In his Conservation Department history, "The First 50 Years," the late Jim Keefe wrote that Towell "was proudest of welding the Department together administratively, of getting it together in its own headquarters, of simplifying regulations and emphasizing the acquisition of public lands for recreation, while never, at any time yielding on the Commission's constitutional authority."

During his career, Towell served as president of the Society of American Foresters (SAF) and the International Association of Fish and Wildlife Agencies and as chairman of the Boy Scouts of America Conservation Committee and the Natural Resources Council of America. Among his many honors were the National Wildlife Federation Conservationist of the Year Award (1976) and the SAF Sir William Schlich Medal (1975).



## Turkey Federation honors Eldo Meyer

Eldo Meyer of Gerald is one of five citizen conservationists nationwide to receive the 2004 Roger Latham Service Award from the National Wild Turkey Federation (NWTf). Meyer received the award at the NWTf's annual convention in Columbus, Ohio, in February. The Latham Award recognizes significant contributions by citizen conservationists.

Meyer was the first president of the Four Rivers Chapter of the NWTf and has served as state chapter president. As current chairman of the state chapter, he has worked with the

Conservation Department to develop programs to stop turkey poaching. He also was instrumental in creating programs to recognize outstanding efforts by conservation agents and vocational agriculture teachers whose work benefits wild turkey conservation.

The NWTf is a 500,000-member nonprofit organization with members in all 50 states and 12 foreign countries. It supports turkey hunting and scientific wildlife management on public, private and corporate lands. For more information, visit <[www.nwtf.org](http://www.nwtf.org)>.



### MU farm to offer quail MANAGEMENT DEMOS

Missourians interested in bringing the bobwhite quail back to their farms soon will be able to see the latest quail management strategies at work at the University of Missouri's Bradford Research and Extension Center east of Columbia. The University recently announced a demonstration program that will show farmers how to meet the habitat needs of quail in a modern agriculture system without reducing profits. Demonstrations will include developing quail-friendly fence rows, renovating pastures to promote quail habitat and creating food plots and crop field borders that work for quail. For a tour of the quail habitat demonstration, contact Tim Reinbott, 573/884-7945, <ReinbottT@missouri.edu>.

### 2003 a banner year for duck hunters

Large waterfowl populations and favorable weather combined to make last year's duck season the best on record at wetland areas managed by the Conservation Department.

The total harvest for the Conservation Department's 17 managed wetland areas was 77,438 ducks, the largest on record. The next-best year since the Conservation Department began keeping records 30 years ago was 2001, when hunters bagged 65,733. This year's average bag was 1.943 ducks per hunt. The only year Missouri hunters topped that was 2000, when they averaged 2.088 birds per hunt.

Otter Slough Conservation Area (CA) led state-managed areas with a harvest of 12,528 and an average of 2.7 ducks per hunt. Grand Pass CA was second, with a harvest of 11,386 and a per-trip average of 2.5 ducks. Four Rivers CA came in third with 9,900 and 2.1 ducks per trip.

Other area harvests included:  
 Duck Creek CA, 7,375 and 1.5/trip; Fountain Grove CA, 6,394 and 1.8/trip; Schell-Osage CA, 5,901 and 2/trip; Eagle Bluffs CA, 5,758 and 2.1/ trip; Ten-Mile Pond CA, 3,944 and 1.9/ trip, and Ted Shanks CA, 3,497 and 1/trip.



The number of ducks taken by hunters at Conservation Department wetland areas normally makes up about one-sixth of the statewide harvest total.

### JOURNALING WITH LEWIS & CLARK

Journaling with Lewis & Clark: A Discovery of Outdoor Missouri is a new adventure booklet available from the Missouri Department of Conservation to "scratch the itch" of history buffs. If you are ready to explore Missouri's outdoors in the spirit of Meriwether Lewis, William Clark and the members of the Corps of Discovery, pick one up at any of the conservation education sites listed below.

"Discovery" is when you see something for the first time. By going to the Conservation Department's interpretive and educational centers, you make discoveries and record them in this journal. Note your discoveries in the booklet.

Take your Journaling with Lewis & Clark booklet with you and travel to the other Conservation Department education centers. On the way, you will have many opportunities to create your own adventure and discover the wild places and wildlife Lewis and Clark saw. At each education center, visit the designated "Journal Stop" and record your entry. When you have finished, bring your booklet to the front desk and we will stamp your journal and give you a unique lapel pin to commemorate your visit.

The lapel pins depict the animals that Lewis & Clark encountered along their journey through Missouri. Discoverers who collect all eight pins can register for a grand prize drawing.

Journaling with Lewis & Clark: A Discovery of Outdoor Missouri will be available until May 31, 2005 only at the Burr Oak Woods Conservation Nature Center in Blue Springs, Columbia Bottom Conservation Area in St. Louis, the Discovery Center in Kansas City, Lost Valley Hatchery in Warsaw, Powder Valley Conservation Nature Center in Kirkwood, Runge Conservation Nature Center in Jefferson City, Shepherd of the Hills Hatchery in Branson and Springfield Conservation Nature Center.



## Outdoor Calendar

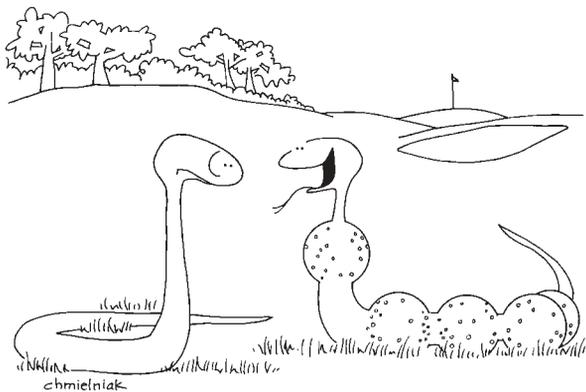
HUNTING	OPEN	CLOSE
Coyotes	5/10/04	3/31/05
Crow	11/1/04	3/3/05
Deer, Archery	9/15/04	11/12/04
	11/24/04	1/15/05
Deer, Firearms		
Urban	10/8/04	10/11/04
Youth	11/6/04	11/7/04
November	11/13/04	11/23/04
Muzzleloader	11/26/04	12/5/04
Antlerless	12/11/04	12/19/04
(permits and regulations available in July)		
Groundhog	5/10/04	12/15/04
Squirrels	5/22/04	2/15/05
Rabbits	10/1/04	2/15/05
Turkey, fall firearms	10/11/04	10/24/04

## FISHING

Black Bass (most southern streams)	5/22/04	2/28/05
Trout Parks	3/1/04	10/31/04
Bullfrog & Green Frog	Sunset 6/30/04	Midnight 10/31/04

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Information*, *Waterfowl Hunting Digest* and the *Migratory Bird Digest*. To find this information on our Web site go to <<http://www.missouriconservation.org/regs/>>.

The Conservation Department's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800/392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to <<http://www.wildlifelicence.com/ma/>>.



**"They don't build much of a nest but they sure lay a lot of eggs."**

## Order Lewis & Clark memorabilia now

It's not too late to get lasting reminders of the Lewis and Clark Bicentennial, but don't wait too long. The Nature Shop ([www.mdcnatureshop.com](http://www.mdcnatureshop.com), 877/521-8632)



has limited quantities of two commemorative items. One is a silver dollar-size coin (\$4) bearing the crossed peace pipes design that appeared on medallions the Corps of Discovery presented to Indian chiefs during the expedition. The other is a pair of video segments about the Corps of

Discovery's passage through Missouri. The videos are available on two VHS tapes (\$15) or a single DVD (\$10).

## AGENT NOTEBOOK

### Conservation Department

areas and accesses get quite a bit of use during the summer months. People use these public areas in many ways. Hunting, fishing, boating, camping, hiking, photography and nature watching are all popular on Department areas, along with many other outdoor activities.

To provide users with the potential to have a pleasant outdoor experience, we have regulations on these areas that may hinder someone else's opportunity to have a good time.

For example, our areas are closed from 10 p.m. to 4 a.m. in order to keep people from having parties and engaging in other activities inappropriate for public conservation areas. The areas, however, can be used during the closed period for specifically authorized outdoor activities, such as camping, fishing, hunting, trapping, boat launching and boat landing.

General regulations for Conservation Department areas can be found in Chapter 11 of the *Wildlife Code* under the heading "Special Regulations for Department Areas." Each area or access may also have its own set of regulations, governing, for example, size and bag limits of fish, camping restrictions or authorized hunting methods. These regulations, along with other area information, are usually posted on bulletin boards near area or facility parking lots.

Take a few minutes when entering a Conservation Department area or access to learn the rules. By following the rules and using common sense and courtesy, our public areas can accommodate a variety of people with a variety of outdoor interests. Please use and enjoy these areas responsibly. — *Bob Burgess*





# Program Schedule

Television the way Nature intended!

## Broadcast Stations

- Cape Girardeau** UPN "The Beat" WQTV / Saturdays 8:30 a.m.
  - Columbia** KOMU (Ch 8 NBC) / Sundays 11:00 a.m.
  - Hannibal** KHQA (Ch 7 CBS) / Weekends, check local listing for times
  - Kansas City** KCPT (Ch 19 PBS) / Sundays 7:00 a.m.
  - Kirksville** KTVO (Ch 3 ABC) / Saturdays 5:00 a.m.
  - St. Joseph** KQTV (Ch 2 ABC) / Weekends, check local listings for times
  - St. Louis** KSDK (Ch 5 NBC) / Sundays, 4:30 a.m.
  - Warrensburg** KMOS (Ch 6 PBS) / Sundays 6:30 p.m.
- ## Cable Stations
- Branson** Vacation Channel / Fri., Sat. 8:00 p.m.
  - Brentwood** Brentwood City TV / Daily, check local listing for times
  - Cape Girardeau** Charter Cable Ed. Ch. 23 / Thursdays 6:00 p.m.
  - Chillicothe** Time Warner Cable Channel 6 / Wednesdays 7:00 p.m.
  - Hillsboro** JCTV / Mondays 12 p.m. & 6 p.m.
  - Independence** City 7 / Thurs. 2 p.m., Sat. 10 a.m. & Sundays 8 p.m.
  - Joplin** KGCS / Sundays 6 p.m.
  - Mexico** Mex-TV / Fridays 6:30 p.m. & Saturdays 6:30 p.m.
  - Noel** TTV / Fridays 4:30 p.m.
  - O'Fallon** City of O'Fallon Cable / Wednesdays 6:30 p.m.
  - Parkville** City of Parkville / First and third Tuesdays of the month 6:30 p.m.
  - Perryville** PVTV / Mondays 6 p.m.
  - Raymore** Govt. Access-Channel 7 / Various, check local listings for times
  - Raytown** City of Raytown Cable / Wed. 10:00 a.m. & Saturdays 8:00 p.m.
  - St. Charles** City of St. Charles-Ch 20 / Tues. 5:00 p.m. and Wed. 10:00 a.m.
  - St. Louis** Charter Communications / Saturdays 10:30 a.m.
  - St. Louis** City TV 10 / Mondays 11:30 a.m., Wednesdays 3:30 p.m.
  - St. Louis** Cooperating School Districts / Wednesdays 9 a.m.
  - St. Louis** DHTV-21 / Mondays 10:30 a.m.
  - St. Louis** KPTN-LP/TV58 / Thursdays 10:00 a.m.
  - St. Peters** City of St. Peters Cable / Various, check local listings for times
  - Ste. Genevieve** Public TV / Fridays 1 p.m., 6 p.m. & 12 midnight
  - Springfield** KBLE36 / Nine times a week, check local listing for times
  - Sullivan** Fidelity Cable-Channel 6 / Wed. 11:00 a.m. and Fri. 7:00 p.m.
  - Union** TRC-TV7 / Tuesdays 3:00 p.m.
  - West Plains** OCTV / Mondays 6:30 p.m.

# Meet our Contributors

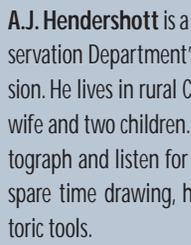


**Jeff Briggler** has been the herpetologist for the Missouri Department of Conservation since 2000. His work on amphibians and reptiles has taken him from deep underground caves to mountaintop glades throughout the Ozarks. When not searching for amphibians and reptiles, he enjoys basketball, biking and smallmouth bass fishing.

Avid angler and *Conservationist* editor **Tom Cwynar** broke three fishing rods on his first crappie fishing trip to Mark Twain Lake. His rods kept sliding along the gunnel and coming to rest beneath the boat's tie-down cleat. When his bobber went down, he would raise the rod and it would snap. Duct tape over the cleat enabled him to continue fishing with a borrowed pole.



**James Dixon** has been a naturalist at the Springfield Conservation Nature Center for seven years. He has an affinity for insects, spiders, snakes and other underappreciated forms of wildlife. James and his wife live in Springfield with their two young sons.



**A.J. Hendershott** is a regional supervisor in the Conservation Department's Outreach and Education division. He lives in rural Cape Girardeau County with his wife and two children. A.J. visits sand prairies to photograph and listen for frogs and birds. He spends his spare time drawing, hunting and recreating prehistoric tools.



**Craig Lingle** works in St. Louis as an environmental engineer. His job involves stormwater management and streambank stabilization. He grew up around muddy streams in Illinois, so he appreciates and enjoys Missouri's clear streams. Free time finds him with his Stream Team, or just hanging out along an Ozark stream with his children.



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## Desert Dweller

Prickly pear cactus blooms from May to July in dry areas, including glades, roadsides and open hillsides, in south and central Missouri. What looks like paddle-shaped leaves on the plant are actually thick stems. Prickly pear's tiny leaves, guarded by spines and hairlike bristles, are distributed over the stem's surface. — *Jim Rathert*